The opinion in support of the decision being entered today is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte EDOUARD FRANCOIS, GWENAEL KERVELLA, and DOMINIQUE THOREAU

Appeal 2007-1301
Application 09/924,322[1]
Technology Center 2600

Decided: September 27, 2007

Before: KENNETH W. HAIRSTON, JAY P. LUCAS and JOHN A. JEFFERY, *Administrative Patent Judges*.

LUCAS, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] Application filed August 8, 2001. Appellant claims the benefit under 35 U.S.C. § 119 of a French application, filed 08/11/2000. The real party in interest Thompson Licensing, S.A.

STATEMENT OF CASE

Appellants appeal from a final rejection of claims 1 to 8 under authority of 35 U.S.C. § 134. The Board of Patent Appeals and Interferences (BPAI) has jurisdiction under 35 U.S.C. § 6(b).

Appellants' invention relates to a process for a format conversion of a digital image sequence. The format of a digital video signal may be converted from one format to another, on a frame by frame basis, or even a pixel group by pixel group basis, in order to facilitate further processing or to improve display properties. The conversion takes processing time. The invention relates to saving some time by noticing if no change has taken place (i.e. no "residue") between two successive independent ("inter type") frames or pixel groups, and if so, merely copying the previous frame or group instead of converting the instant one. In the words of the Appellants:

> [The invention] is a process for the format conversion of an image sequence employing video data coded on the basis of a structure of pixel groups, wherein, for a coded pixel group to be converted, if the mode of coding used is of the inter type with no residue, the conversion is performed by a copy of a converted pixel group of a preceding image linked by the motion vector associated with said coded pixel group.

(Specification 4).

Claim 1 is exemplary:

1. Process for the format conversion of an image sequence employing video data coded on the basis of a structure of pixel groups comprising a first step for decoding the coded data and a second step of converting of the decoded data, wherein, for a coded pixel group to be converted, if the decoding mode is of the "inter" type with no residue, the conversion is

performed by a copy of a converted pixel group of a preceding image linked by the motion vector associated with said coded pixel group.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Kato	US 5,701,164	Dec. 23, 1997
Chen	US 6,259,741 B1	Jul. 10, 2001
Lim	US 6,333,952 B1	Dec. 25,2001

Rejections:

Claims 1 to 3 and 5 to 8 stand rejected under 35 U.S.C. § 103(a) for being obvious over Chen in view of Lim.

Claim 4 stands rejected under 35 U.S.C. 103(a) for being obvious over Chen and Lim in view of Kato.

Appellants submit that the claims 2, 3 ,5, and 6 stand or fall together with claim 1. (Br. 12.)

Appellants contend that the claimed subject matter is not rendered obvious by Chen alone, or in combination with Lim or Kato, for reasons to be discussed more fully below.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Briefs and the Answer for their respective details. Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not

to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2004).[2]

We affirm-in-part.

ISSUE

The issue is whether Appellants have shown that the Examiner erred in rejecting the claims under 35 U.S.C. § 103(a). The issue turns on whether the Chen reference teaches the claimed limitations, specifically the limitation "if the decoding mode is of the "inter" type with no residue, the conversion is performed by a copy of a converted pixel group of a preceding image".

FINDINGS OF FACT

1. Appellants have invented a process for decoding and changing the format of a stream of video data. The stream of images to be converted may contain images wherein one image may be predicted from a preceding image (called "intra mode") or wherein one image is of a type for which no prediction is used (called "inter mode"). (Specification 2:13; 3:35). In inter mode, the predicted subsequent image block may be subtracted from the current block, resulting in an image block called a residue. (Specification 2:26). The residue thus shows the amount of change from the preceding image block. (Specification 2:31).

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[2] Appellants have not presented any substantive arguments directed separately to the patentability of the dependent claims or related claims in each group, except as will be noted in this opinion. In the absence of a separate argument with respect to those claims, they stand or fall with the representative independent claim. *See In re Young,* 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991).

2. Format conversion takes processing time. Appellants' invention relates to situations where, in inter mode, the residue is zero. In these situations, format conversion may be omitted for the current block since it has not changed from the preceding block. Instead, according to the invention, one need merely recopy the previously converted pixel group. (Specification 5:26).

PRINCIPLES OF LAW

On appeal, Appellant bears the burden of showing that the Examiner has not established a legally sufficient basis for the rejection of the claims.

"In reviewing the [E]xaminer's decision on appeal, the Board must necessarily weigh all of the evidence and argument." *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Both anticipation under 35 U.S.C. § 102 and obviousness under § 103 are two-step inquiries, in which the first step is a proper construction of the claims and the second step requires a comparison of the properly construed claim to the prior art. *Medichem S.A. v. Rolabo S.L.*, 353 F.3d 928, 933, 69 USPQ2d 1283, 1286 (Fed. Cir. 2003).

"Shortly after the creation of this court, Judge Rich wrote that "[t]he descriptive part of the specification aids in ascertaining the scope and meaning of the claims inasmuch as the words of the claims must be based on the description. The specification is, thus, the primary basis for construing the claims." *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452, [227 USPQ 293, 295-96,] (Fed. Cir. 1985). On numerous occasions since then, we have reaffirmed that point..." *Phillips v. AWH Corp.*, 415 F3d 1303, 1315, 75 USPQ2d 1321, 1328 (Fed. Cir. 2005).

ANALYSIS

Appellants contend that the Chen reference fails to show the claimed limitation of "wherein, for a coded pixel group to be converted, if the decoding mode is of the "inter" type with no residue, the conversion is performed by a copy of a converted pixel group of a preceding image linked by the motion vector associated with said coded pixel group." (Emphasis added.)

To be clear about this limitation, (*See Medichem S. A.* cited above.), we appreciate from the specification that "a copy of a converted pixel group" uses the word "copy" in its verb form. That is, we interpret the claim as requiring that a "copy" function is performed replacing the instant pixel group with a converted pixel group of a preceding image. We do not interpret the word copy as a noun where the conversion is performed in some way based upon a copy of a pixel group. (Our interpretation is consistent with Specification, page 5, bottom paragraph; page 7, line 15).

With that understanding, we consider Chen, Figure 3, and Column 11, lines 9-25. We notice that Chen performs a first step of decoding the video signal in 4:2:2 format, in a variable length decoder (VLD) 305, as claimed. Next, in the converter stage, the signal of the "current frame" is further processed by an inverse quantizer Q_1^{-1} 310 and inverse discrete cosine transform (IDCT) 315 and then provided to adder 330. In the adder, (assuming "inter" mode") that signal from 315 is combined with the output of box 320 through switch 325. Box 320 is an MC(1) function, described as motion compensation of the data in the 4:2:2 chroma 4:2:2P format, provided along the motion vector (MV) from the VLD 305. Examiner reads this process on "performing the conversion by copying a converted pixel group of a preceding image". However, after careful review of the

reference, we do not find that claimed copying with respect to adder 330. Chroma MC (1) is not of the converted pixel group in 4:2:0 format. Nor do we find that the adder performs a copying function with respect to the signal from IDCT 315, but rather an "adding" function.

With respect to adder 345, we do appreciate that the converted signal is fed back through switch 370 during the inter mode providing a reference signal for Chroma MC(2) box 325. This signal is then fed through switch 327 to adder 345. However, this signal is subtracted in the adder (note the "–" sign by the adder in Figure 3). In Column 11, line 15 MC (2) is described as the motion compensation unit for 4:2:0 data, and the signal is described as reference image data provided to adder 345 (col. 11, line 14). However, Appellants' analysis (Reply Br. 6, top) that the result is the difference between the current image data and the reference signal appears accurate. (Note Chen, col. 12, ll. 1-7). We thus find that the Chen reference does not teach the conversion being performed by a copy of the pixel group of the previous image, as claimed.

Lim is cited for teaching that the decoding and the converting of the signals may be performed in two steps. (Answer 7, bottom paragraph). However, as Chen was not found to contain the basic teaching of "the conversion is performed by a copy of a converted pixel group of a preceding image linked by the motion vector associated with said coded pixel group," we need not address Appellants' contentions with respect to the contents of Lim or combining references. Claim 1 and the dependent claims 2, 3, 5, and 6 are found to be non-obvious over the cited prior art.

Independent claim 7 contains the same limitation quoted in the previous paragraph, and for the reasons expressed above the rejection under 35 U.S.C. § 103 is found to be unfounded over the cited prior art.

Independent claim 8 contains a limitation differently worded from that of the previous claims. Claim 8 addresses a process for format conversion of an image sequence "wherein, in the case where the complementary data pertaining to a pixel group and to a given resolution have zero value, this pixel group for the converted image of given resolution is obtained from a group of converted pixels of the image of lower resolution." (Emphasis added.) The limitation of copying a pixel group of a preceding image is not present; instead it was replaced by the broader "is obtained from" limitation, which only requires some connection to the converted pixels. As mentioned in the Specification, page 12, line 17+, this resolution mode may be viewed as inter coding mode. The Examiner states that in Chen (Answer 17, top) when the converter 300 (Figure 3) is analyzed, the converted image "is obtained from" the converted pixels as the converted pixels are fed back and influence the conversion process. We do not find error in that reasoning, and we thus find that the rejection of Claim 8 is supported by the cited prior art.

Claim 4 was rejected separately from claims 1 to 3 and 5 to 8, under 35 U.S.C. § 103 (a), for being obvious over Chen and Lin in view of Kato. Kato is cited for teaching that the coding mode is determined from the "skipped macroblock" or "uncoded" mode. (Answer 26, middle.). However, claim 4 is dependent on claim 1, and is subject to the limitation of "performed by a copy of a preceding image". Thus for the same reasons expressed with regard to claim 1, we do not find that the Chen reference supports the rejection.

CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude that the Examiner erred in rejecting claims 1 to 7, but not in rejecting claim 8.

DECISION

The Examiner's rejection of claims 1 to 7 is Reversed. The rejection of claim 8 is Affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

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